

10024261-122101

WHAT IS CLAIMED IS:

1. A system for insertion into a body lumen for delivering an agent to a site on the body lumen, the system comprising,

a tubular member having a lumen there through to allow the passage of material, wherein the tubular member may be expanded causing the stenting system to be retained against the wall of the body lumen;

an outer membrane surrounding the tubular member, wherein at least a portion of the outer membrane is porous to the agent to allow the agent to be deposited on the site;

an inner membrane attached to the tubular member, wherein the inner membrane is non-porous to the therapeutic agent to be delivered to the site; and

a chamber located between the inner and outer membranes for holding the agent, wherein the agent in the chamber diffuses through the porous portion of the outer membrane and onto the body site.
2. The system according to claim 1, further comprising an opening in the chamber for delivery of the agent to the chamber.
3. The system according to claim 2, further comprising a one-way valve in the opening preventing the agent from exiting the chamber through the valve.
4. The system according to claim 1, wherein the inner membrane prevents the agent in the chamber from entering the lumen of the tubular member.
5. The system according to claim 1, wherein the tubular member is formed from a material that can return to its initially formed shape after deformation.

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6. The system according to claim 1, wherein the tubular member is capable of being expanded by a balloon inserted into the lumen of the tubular member.

7. The system according to claim 1, wherein the outer membrane is flexible such that it may conform to the shape of the body lumen.

8. The system according to claim 1, further including a tubing in communication with the chamber for introducing to the agent into the chamber.

9. The system according to claim 1, further including grasping members located on the tubular member for grasping the tubular member.

10. A system for insertion into a body lumen for delivering an agent to a site on the body lumen, the system comprising,

an inner tubular member having a lumen there through for the passage of material;

a membrane surrounding the inner tubular member;

an outer tubular member surrounding the inner tubular member and the membrane; and

a porous member forming at least a portion of the outer tubular member, wherein the membrane and the outer tubular member define a chamber there between for holding the agent, wherein the agent in the chamber may pass through the porous member of the outer tubular member and be deposited directly on the body site, and wherein the membrane is non-porous to the agent thereby isolating the lumen of inner tubular member from the agent in the chamber.

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11. The system according to claim 10, further comprising balloons located at each end of the outer tubular member, wherein the balloons can be expanded to retain the system against a wall of the lumen.

12. The system according to claim 10, wherein the inner tubular member is capable of being expanded such that when it is expanded the system is retained against the lumen wall.

13. The system according to claim 12, wherein the inner tubular member is formed from a material that can return to its initially formed shape after deformation.

14. The system according to claim 12, wherein the inner tubular member is capable of being expanded by a balloon inserted into the lumen of the inner tubular member.

15. The system according to claim 10, further including a tubing in communication with the chamber for introducing the agent into the chamber.

16. The system according to claim 10, further including grasping members located on the inner tubular member for grasping the inner tubular member.

17. The system according to claim 10, further comprising an opening in the chamber for delivery of the agent to the chamber.

18. The system according to claim 18, further comprising a one-way valve in the opening preventing the agent from exiting the chamber through the valve.

19. A system for delivering an agent to a body site comprising:
an expandable tube having a lumen there through, wherein the sides of the tube have openings therein to allow passage of material through the lumen;

an outer membrane surrounding the expandable tube and forming a chamber with a surface of the expandable tube, wherein at least a portion of the membrane is porous to the agent allowing diffusion of the agent there through to the body site, and wherein the expandable tube prevents the agent from diffusing from the chamber and into the lumen of the expandable tube; and

an opening in the chamber allowing delivery of the agent to the chamber.

20. The according to claim 19, further comprising an inner membrane attached to the expandable tube, wherein the inner membrane is non-porous to the agent and prevents the agent in the chamber from entering the lumen.

21. The system according to claim 19, further comprising a one-way valve located in the opening preventing the agent from exiting the chamber through the valve.

22. The system according to claim 19, wherein the tube is formed from a material that can return to its initially formed shape after deformation.

23. The system according to claim 19, wherein the tube is expanded against the body site by a balloon catheter introduced through the lumen of the inner tube.

24. The system according to claim 19, further comprising tissue adhesives located along a portion of the tube for retaining the tube at the body site.

25. A system for delivering and retaining a system in a body lumen comprising:

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an expandable tubular member for supporting a target body lumen, the expandable tubular member having first and second ends and a lumen there through;

tissue adhesives located along at least a portion of the length of the expandable tubular member to adhere to the tissue and retain the expandable tubular member in the body lumen; and

an outer tubular member to which the tissue adhesives will not adhere, wherein the outer tubular member surrounds the expandable tubular member and tissue adhesive during delivery of the expandable tubular to the body lumen to prevent the tissue adhesives from adhering to body sites other than the target body lumen and the outer tubular member is removed once the expandable tubular member reaches the target body lumen to allow the tissue adhesives to retain the expandable tubular member in the body lumen.

26. The system according to claim 25 wherein the tissue adhesive is located on the first and second ends of the expandable tubular member.

27. The system according to claim 25, further comprising an outer membrane surrounding the expandable tubular member and forming a chamber with a surface of the expandable tubular member, wherein at least a portion of the membrane is porous to an agent to be delivered to the body lumen allowing diffusion of the agent there through to the body lumen.

28. The system according to claim 27 wherein the expandable tubular member prevents the agent from diffusing from the chamber and into the lumen of the expandable tubular member.

29. The system according to claim 28 wherein the expandable tubular member includes an inner membrane attached to the expandable and the inner membrane prevents the agent from diffusing from the chamber and into the lumen of the expandable tubular member.

30. The system according to claim 27 further including an opening in the chamber allowing delivery of the agent to the chamber.

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